

What is claimed:

1 1. Said electromechanical valve actuator (301, 500) for internal combustion
2 engines, equipped with a polarized electromagnet (300; 504; 506) exerting a magnetic
3 action on a magnetic plate (302; 502) subjected to a mechanical restoring action, which
4 said action can compensate the mechanical action and maintain the plate (302; 502) in a
5 distant position from the electromagnet, characterized in that the actuator comprises
6 means to ensure that the displacements of the plate are controlled solely by this
7 electromagnet and the mechanical restoring action in such a way that the plate performs
8 shuttle movements starting from the distant position.

1 2. Actuator in accordance with claim 1, characterized in that it comprises
2 means to ensure that the distant position of the plate corresponds to an open position of
3 the valve.

1 3. Actuator in accordance with one of the above claims, characterized in that it
2 comprises means to move the plate (302; 502) away from the electromagnet (300; 504;
3 506) by annulling or inverting the direction of the supply current of the latter.

1 4. Actuator in accordance with one of the above claims, characterized in that
2 the plate (302; 502) is maintained at such a distance that the rod (510) of the valve will
3 be distant from a rod (508) of the plate controlling this valve.

1 5. Actuator in accordance with one of the above claims, characterized in that,
2 with the electromagnet (300; 504; 506) having the shape of an E provided with a central
3 branch (304) and two end branches, the plate has across section (S_p) smaller than the
4 cross section ($S_{c/2}$) of the end branches and/or smaller than half the cross section (S_c) of
5 the central branch.

1 6. Actuator in accordance with one of the above claims, characterized in that,
2 with the electromagnet having the shape of an E, a magnet is fixed at the end of these
3 branches opposite the plate.

1 7. Actuator in accordance with one of the above claims, characterized in that

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2 the mechanical restoring action is generated by at least one spring.

1 8. Internal combustion engine equipped with an electromechanical valve
2 actuator, comprising a polarized electromagnet (300; 504; 506) and a mobile magnetic
3 plate (302; 502) subjected to a mechanical restoring action, characterized in that the
4 actuator is according to one of the above claims.